

TA 140
C6 A3

March 17

NATIONAL ACADEMY OF SCIENCES
BIOGRAPHICAL MEMOIRS
PART OF VOLUME VII

BIOGRAPHICAL MEMOIR

OF

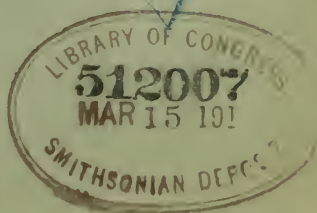
CYRUS BALLOU COMSTOCK
1831-1910

BY

HENRY L. ABBOT

PRESENTED TO THE ACADEMY AT THE APRIL MEETING, 1911

CITY OF WASHINGTON
PUBLISHED BY THE NATIONAL ACADEMY OF SCIENCES
July, 1911







C. B. Comstock

NATIONAL ACADEMY OF SCIENCES
BIOGRAPHICAL MEMOIRS
PART OF VOLUME VII

BIOGRAPHICAL MEMOIR

OF

CYRUS BALLOU COMSTOCK

1831-1910

BY

HENRY L. ABBOT

PRESENTED TO THE ACADEMY AT THE APRIL MEETING, 1911

CITY OF WASHINGTON
PUBLISHED BY THE NATIONAL ACADEMY OF SCIENCES
July, 1911

TA 140
.C6 A3

NATIONAL ACADEMY OF SCIENCES.

Of the biographical memoirs which are to be included in Volume VII, the following have been issued:

PAGES.

1- 22:	Wolcott Gibbs.....	F. W. Clarke
23- 88:	William Keith Brooks.....	Edwin Grant Conklin
89-114:	Charles Augustus Young.....	Edwin B. Frost
115-141:	Benjamin Silliman (1816-1885).....	Arthur W. Wright
143-169:	James Hammond Trumbull.....	Arthur W. Wright
171-193:	William H. C. Bartlett.....	Edward S. Holden
195-201:	Cyrus Ballou Comstock.....	Henry L. Abbot

CYRUS BALLOU COMSTOCK.

General Cyrus Ballou Comstock was born at West Wrentham, Massachusetts, on February 3, 1831, being the son of Nathan and Betsey (Cook) Comstock. He represented the ninth generation of an old New England family, which came originally from Devonshire, England, but the exact date of emigration is not of record. Late in life he compiled and published a biographical register of the family, from which it appears that the first of the name, William Comstock, probably removed from Massachusetts to Connecticut in 1635 or 1636, and made his home at New London, where he lived to a good old age. The Wethersfield records indicate that he took part in the expedition which captured the Pequot fort at Mystic in May, 1637, killing some five hundred Indians. The next four generations of the family resided in Rhode Island, but the General's great-grandfather, Nathan Comstock, removed to West Wrentham, Massachusetts, which has subsequently continued to be the home of his branch of the family. Nathan was a Quaker, and consequently took no active part in the Revolution, but he was a member of the Massachusetts convention which ratified the Constitution of the United States on February 7, 1788, and was also a member of the general court of Massachusetts in 1789.

The General as a boy studied in the local public schools and at an academy in Scituate, Rhode Island. Happening to see the operations and instruments of a party making a railroad survey, and those of a coast survey party, then occupying the primary station at Beaconpole, he became deeply interested in such work; he sought and obtained employment as rodman and as leveler on the Providence and Worcester Railroad and on the South Shore Railroad of Massachusetts. Nominated by the Hon. Horace Mann as cadet at the West Point Military Academy in 1851, he was graduated with first honors in 1855, receiving a commission as brevet second lieutenant in the Corps of Engineers. He served through all grades in that corps to that of colonel, inclusive, being retired from active service by

operation of law in 1895. In 1904 he was promoted to the grade of brigadier general on the retired list, under the act of Congress granting such advancement for military service during the Civil War. He died at New York City on May 29, 1910, and his remains were interred with military honors at West Point by the side of his wife, Elizabeth, daughter of Montgomery Blair. Their marriage had taken place in 1869, and her death and that of their infant occurred in 1872. The loss was a life-long grief to him.

Prior to the outbreak of the Civil War he served on the construction of fortifications in Florida and Maryland until assigned as assistant professor of natural and experimental philosophy at the Military Academy, where he remained from September, 1859, until July, 1861.

He was engaged in the construction of the defenses of Washington until the opening of the peninsular campaign, when he was assigned to the engineering staff of the Army of the Potomac, and so continued until after the battle of Chancellorsville, serving as chief engineer from November, 1862, until March, 1863. He was then transferred to the Department of Tennessee, and under General Grant took part (after Captain Prime's health failed) as senior engineer at the siege and surrender of Vicksburg, continuing on the general's staff until himself invalided in September. The Government is now erecting in the Vicksburg National Park several tablets to commemorate the services of officers in the siege, and one of General Comstock is among them. It consists of a portrait relief mounted on a granite slab, with an inscription below, surrounded by a wreath border of laurel.

He soon recovered his health and returned to duty, with the increased rank of lieutenant-colonel, as assistant inspector general of the Military Division of the Mississippi. On March 29, 1864, he was appointed senior aide-de-camp to Lieutenant-General Grant, retaining the volunteer rank of lieutenant-colonel, and served in that capacity to the end of the war, being engaged in the battles of the Wilderness, Spottsylvania, Cold Harbor, Petersburg, and in the assault and capture of Fort Harrison. He was temporarily detached to accompany General Terry as his chief engineer at the capture of Fort

Fisher in January, 1865, and again to serve as senior engineer on the staff of General Canby in the Mobile campaign of February, March, and April. He received on the spot from the Secretary of War, who arrived on the day after the taking of Fort Fisher, the brevets of colonel and brigadier general of volunteers. General Terry in his report states: "To Brevet Brigadier General C. B. Comstock, aide-de-camp on the staff of the lieutenant-general, I am under the deepest obligations. At every step of our progress I received from him the most valuable assistance. For the final success of our part of the operations the country is more indebted to him than to me." For his services in the Mobile campaign he was breveted major general of volunteers. During the war he received four brevets in the Regular Army, the highest being that of brigadier general, and attained the rank of major in the Corps of Engineers.

When the war was over, General Grant so highly appreciated his efficiency that he was retained on his staff with the volunteer rank of lieutenant-colonel until May 3, 1870, at which date he resigned it, and returned to duty as major in the Corps of Engineers, attracted by the offer of the superintendency of the Geodetic Survey of the Northern and Northwestern Lakes, tendered him by General Humphreys, who was cognizant of his eminent fitness for the position. As noted above, this duty was directly in line with his early ambition.

The lake survey had been inaugurated in 1841, and had been directed successively by six officers of engineers, serving for comparatively short periods; among them may be named General George G. Meade, then captain of topographical engineers. The operations were conducted with all the precision needful to determine not only the topography and hydrography of a region some 17,000 square miles in area, but also to be of value in estimating the form and dimensions of the earth. This involved the determination of standards of extreme accuracy, the measurement of eight primary base lines, a primary triangulation, covering about 1,650 miles in length, and hydrography extending over nearly 10,000 square miles. The local amount and direction of the earth's magnetic force and the local deflection of the plumb line were also matters to be

investigated. General Comstock was able to bring to a successful termination the grand features of the survey, and his final report stands as a monument to the professional ability of himself and of his associates. It should be added, however, that the work still continues and probably will never cease, in view of the enormous extension of lake commerce and the necessity of noting the changes in hydrography due to ice movements and other natural forces, and of keeping the maps for navigators always up to date. The General remained in charge of the work from 1870 to the completion of the primary triangulation in 1882, with only two intermissions; the first of about six months, when he was sent to Europe to examine the works of improvement at deltas of great rivers, and the second for about a year, when on leave of absence in Europe with similar objects in view. During this long period he also served on several temporary boards to report on technical lake-harbor problems and on the improvement of low-water navigation on the Mississippi River, and he also acted as superintending engineer to examine the progress of Eads' jetties at the mouth, upon which he rendered six reports in 1875-1877.

His next important assignment was to the Mississippi River Commission, which was created by act of Congress, approved June 28, 1879. He was detailed at once as a member, and continued to serve on it for sixteen years until his retirement from active service in 1895, being its president for the last five years. Many difficult hydraulic problems, and some legal in character, came before the board for consideration, and General Comstock's record met the approval of those most conversant with such matters.

After August 2, 1882, he was also a member of the permanent board of engineers for fortifications and river and harbor improvements, where our official relations were most intimate, leaving many pleasant memories. In addition to these board duties he served as division engineer of the Southwestern Division after December, 1888, and he commanded the Engineer School of Application, then stationed at Willets Point, New York Harbor, for about a year, in 1886-1887. He represented the War Department at the Fifth Congress of Inter-

national Navigation, held at Paris in July, 1892. Such were his final duties before retirement.

General Comstock's busy life was spent in the application of science to public needs rather than in original research, except incidentally when practical problems arose in his works; but his interest in the advancement of science was so great that in 1907 he donated to the National Academy of Sciences the sum of ten thousand dollars to create a trust fund, of which the interest is to be devoted to researches in electricity, magnetism, and radiant energy. His own experience had led him to appreciate the value of such studies. He was elected a member of the Academy in 1884, and was also a member of the American Academy of Arts and Sciences and of the Military Order of the Loyal Legion.

BIBLIOGRAPHY.

General Comstock's writings were largely confined to technical projects for local river and harbor improvements, and the annual reports of the chief of engineers contain fifteen papers of this character from his pen. Furthermore, besides the numerous reports of the permanent boards of which he was so long a member his signature appears upon the reports of sixty local engineer boards, of twenty-one of which he was president. To recapitulate these numerous documents is needless, but the following may be named:

Report upon the Primary Triangulation of the United States Lake Survey, by Lieut.-Col. C. B. Comstock, Corps of Engineers, aided by the assistants on the survey. Professional Papers of the Corps of Engineers, U. S. Army, No. 24, 1882.

Three papers in the series of ten Public Documents Relative to the Scientific Surveys of the United States, and to the report thereon made by the National Academy of Sciences, in accordance with the requirements of the Act of Congress, approved June 20, 1878.

Variation in length of a zinc bar at the same temperature. *American Journ. Sci.*, 3d ser., Vol. 22, 1881, pp. 26-30.

Mississippi River. *Encyclopædia Britannica*, tenth edition.

Report on the Fifth Congress of International Navigation, held at Paris, July, 1892.

Note on "change of plane" at Red River Landing. Annual Report of the Chief of Engineers for 1893, Part V, Appendix YY, Report of the Mississippi River Commission, Appendix 1, pp. 3564-3569.

LIBRARY OF CONGRESS



0 028 151 742 9